A RUSH THROUGH TUNISIA, ALGERIA, AND MAROCCO, AND COLLECTING IN THE MAROCCAN ATLAS, IN 1927.

By ERNST HARTERT.

(Plates VIII–IX)

ON March 14, 1927, I left London with Mr. Lancelot Turtle. Though the train was very late at the Gare de Lyon in Paris, we had time to dine in the excellent restaurant at the station in the company of Monsieur Heim de Balsac. Next morning we were most kindly received at Marseille by Dr. Fromols-Rakowski and, according to plan, met the Hon. Masauji Hachisuka. Together we all visited the beautifully situated Museum, where Professor Vayssière most obligingly showed us what we wanted to see and discuss, chiefly the Falcons. We had a wonderfully quiet crossing over to Tunis on the comfortable S.S. *Gouverneur Général Grévy*, but arrived in Tunis in a cold rain. On the "canal" Flamingoes were seen close by, which are as common as they used to be in olden times. Messrs. Lavauden and Blanchet kindly awaited us on the pier, notwithstanding the early hour of our arrival, and helped us through the custom house with our guns and cartridges. With these two ornithologists we visited the neighbourhood of Tunis, especially the ruins of Carthage—i.e. what little is left of them—and saw their collections. While Monsieur Lavauden's birds are nearly all (mounted !) in the Museum of Grenoble, Monsieur Blanchet has in his house in Hammam Lif a beautiful and rich collection, partly mounted, partly in skins, of Tunisian (and Algerian) birds, all most conscientiously labelled and named.

Near Carthage we visited the very interesting "Station océanographique de Salammbô," where we, among others, were shown two live young Mediterranean Shags, *Phalacrocorax aristotelis desmaresti*, which were taken from a nest on the islet of Chickli in the Lake of Tunis as early as March 12, 1927, so that the eggs must have been laid in February. On the Lake of Tunis we saw, among other birds, fine adult *Larus melanocephalus*.

In Tunis Mr. Hachisuka bought an excellent Citroën car, and on the 20th we left Tunis for Sfax. We passed the beautiful ruins of El-Djem, and at Sousse, in the outskirts of the town, we saw a pair of *Streptopelia senegalensis phoenicophila*, which now ranges along the coastal region to Sousse and even to Cape Bon. Grey Shrikes we found strikingly more numerous than in most parts of Algeria, all *Lanius excubitor dodsoni*, but north of Sfax already typical *L. e. elegans* occurs.

In Sfax we were most kindly received by Monsieur Paul Bédé, and looked over his collection of skins, and his zoological garden of birds and animals, chiefly of Africa Minor. With Monsieur Bédé we made an excursion southwestwards of Sfax, far out into the semi-desert. *Lanius excubitor elegans* was common, also Crested Larks, but bird life was not very rich. *Oenanthe moesta* was once met with, one pair, but I tried in vain to find the nest. From Sfax we went northwards again to Sousse, where we met Monsieur Lavauden, and saw the beautiful collection of Messrs. Gouttenoire, very well mounted, all from the neighbourhood. Much of the country is taken up by olive-trees,

COMATIBIS EREMITA FLYING OVER THEIR NESTS.

in which *Fringilla c. spodiogenys* is common, and several times we saw *Falco biarmicus erlangeri*, a female being shot from the car by Turtle.

The night we spent in a sufficiently comfortable hotel in Kairouan—once a forbidden town for infidels—and next day made a delightful excursion to the Djebel Cherichera, with Monsieur and Madame Blanchet, Lavauden of Tunis, and Alfred Vaucher from Switzerland, my correspondent of many years, whom I had never met in person. The Djebel Cherichera is a very interesting locality and a beautiful mountain stock. Monsieur Blanchet, who knows it well, called our attention to the fact, that there one could on a single day come across forms peculiar (in Tunisia) to the north and to the south of the country. For example,

Fig. 1.—NEST OF GOLDEN EAGLE ON MT. CHERICHERA.

one could find the northern *Pycnonotus barbatus barbatus* and the southern *Ammomanes deserti algeriensis*, *Emberiza striolata sahari*, and *Turdoides fulvus fulvus*. Though it was a beautiful day, when we were there, we found the ornis rather poor, but observed *Aquila chrysaetos homeyeri* (*occidentalis*), flying about near an empty nest, *Bubo* (*bubo*) *ascalaphus*, Crested Larks (*theklae*), and the *Ammomanes*. The scarcity of birds, our kind guides think, must be due to the unusual dryness of the locality.

From Kairouan we returned, via Sousse, to Tunis ; after a couple of days we said au revoir to our friends and motored to the Kroumirie, the forested mountain district, with extensive woods, chiefly of oaks (*Quercus suber* and *Q. mirbeckii*), *Arbutus*, Ash, *Erica arborea*, Ivy, and a rich undergrowth, where the North African forest birds abound. Unfortunately cold and steady rain set

in and we stayed only one day. We found Woodpeckers, Titmice, Wrens, Jays, and the Robins quite common near the little hotel " Les Sources " and the larger one (full as usual) of " Les Chênes." The drive over the Medjerda Mountains down to the frontier station of Ghardimaou and the town of Souk-Ahrâs in East Algeria was very cold. In Souk-Ahrâs the hotel was full, but we found clean bedrooms near by ; at the frontier there was of course delay and formalities about the car as well as about the guns and cartridges, but fortunately I had corresponded and arranged about the latter through the kind help of H.M. British Consulate in Alger. The road over the high mountain range between Souk-Ahrâs and Ghardimaou was for a long way above the forest zone, covered

FIG. 2.—GORGE OF RUMMEL WITH SUSPENSION BRIDGE.

with halfa, and snow patches were still seen on a slope close to the road, which was none of the best, though the scenery is grand. Of birds only Crested Larks (*theklae*), Ravens, and *Diplootocus moussieri* were observed.

From Souk-Ahrâs we went to Constantine, where we again admired the stupendous gorge of the Rummel, in which Jackdaws, Kestrels, Storks, and Egyptian Vultures were observed.

From Constantine we had a delightful day going to El-Kantara, seeing on the way a big flock of *Grus grus* south of Constantine, also Buzzards (*Buteo rufinus cirtensis*), Black Kites, and other common birds. In picturesque El-Kantara we spent two days, but we did not see any unusual birds.

On April 3 we went to Biskra, seeing a fine adult Lämmergeyer (*Gypaëtos*) on the Col de Sfa, from where one descends down into the Biskra plain. In

Biskra we stopped a few days, going over the ground so familiar to me. It was drier than I had seen it before, and there seemed to be less birds, the result of several dry years. In the Mouleïna, near the river, a few *Merops persicus chrysocercus* were seen, *Oenanthe moesta* was in its accustomed haunts, also *Alaemon alaudipes alaudipes* and others of our old friends. We did not see *Streptopelia senegalensis phoenicophila*, but did not go about very much in the oasis, and this beautiful Dove has become scarcer than it used to be, though it still inhabits the Biskra palm groves. In Biskra we found comfortable quarters again in the Hôtel du Sahara.

On April 6 we travelled over the mountains to Bou Saada, the finest day's journey so far, though actually hot. We passed the big oasis of Zaatcha and Tolga, coming across *Turdoides* (*Crateropus*, *Argya*) *fulvus fulvus* among the same *Zizyphus*-bushes before Zaatcha, where Lord Rothschild and I saw it for

Fig. 3.– ♂ HOUBARA BUSTARD SHOT ON WAY TO BOU-SAADA.

the first time in 1909. Not very far from Zaatcha the road—which is rather bad in places—ascends the mountains and affords beautiful views. From the summit of the pass towards Bou Saada one passes over a treeless plateau on which Bustards (*Chlamydotis undulata undulata*) and Dorcas Gazelles are found. It would have been interesting to explore this plateau, but our time was too short. As it was, we reached Bou Saada in the dark, but found quite comfortable rooms in one of the less pretentious hotels, avoiding as usual the large and splendid but expensive hotel Transatlantique. Bou Saada is picturesquely situated on terraces above the Oued Bou Saada, which runs into the Chott-el-Hodna, with fine palm gardens, and not far from an extended group of high sand dunes which, so far away from the real Sahara, have, of course, some of the desert plants and creatures, but not all. In fact, in the one day we were able to spend at Bou Saada we saw none of the real desert birds peculiar to the Saharan dunes; we shot a pale form of the *theklae* group of Crested Larks (see list). In the river-bed were numerous House Martins, but probably still on migration.

On April 8 we left Bou Saada with regrets. The good road passes over the most typical Algerian Haut Plateau, with much *Artemisia herba-alba*. Birds were fairly numerous. Except Crested Larks—no *cristata* observed—we saw numerous *Melanocorypha calandra calandra*, *Ammomanes deserti algeriensis*, I heard and Turtle shot *Chersophilus duponti duponti*, *Diplootocus moussieri* were not rare in places, *Oenanthe hispanica hispanica* were seen, a flock of Black-bellied Sandgrouse (*Pterocles orientalis* L.), and the usual Waders on a little swamp, including *Himantopus*. Somewhere along this road Monsieur d'Abadie (whom we had met already in Tunisia, and whom we saw again en passant at luncheon in Djelfa) had shot *Eremophila alpestris bilopha*, which we did not observe.

In Djelfa we stopped for luncheon in the old hotel, and then proceeded to Berrouaghia, where we arrived rather late in the dark. We were warned that Boghari was rather full of bugs, and so did not stop there as we had intended, and also because we did not care to arrive too late at Alger the next day, as the continually winding road up to the nearly 1,000 m. takes a rather long time and is tiring for the driver. We passed the cliffs south of Boghari, where in Loche's time and recently *Comatibis eremita* nested, but apparently the little colony was not frequented in 1927. We could not devote much time to the exploration of these rocks, but Mr. Jourdain visited them also a bit later and found not a single bird there, though he explored them well.

In Alger we visited our old friend Dr. Nissen, and witnessed the tail-end of the violent gale which did so much damage along the western part of the north coast of Africa Minor, especially at Melilla, where quite a number of ships were lost. Here Mr. Turtle left us, to our regret, as he had to go back to Cambridge.

April 12 Hachisuka and I left Alger by the western road, which runs close to the sea-shore as far as Ténès and offers many beautiful views. The gale had abated and it was a magnificent day. The country contains vineyards, fields and woods of Aleppo pines, which were full of *Fringilla coelebs africana* Lev., but no specially remarkable birds were observed.

In Orléansville House Martins nested in numbers, all on one building opposite the hotel in which we passed the night. They were already building their nests, of which I counted between thirty and forty. Sparrows took possession of barely finished nests. Black Swifts only were seen, as before in Alger—where in 1908 and 1909 Pallid Swifts nested also, though in smaller numbers—and later on in Mascara.

April 14 we had an easy run over good roads to Mascara, over Haut Plateau country, though not steppe, but fertile, mostly cultivated land with many vineyards and olive gardens, especially in the plain of Egris, where the beautiful Mascara wines come from, which are perhaps the best of Algeria. As no train was running next day we had to stay the whole of it in Mascara, which, notwithstanding a comfortable hotel, was somewhat wasted, as the agricultural plain did not contain many desirable birds. Chaffinches, Goldfinches, Greenfinches, and *Passer domesticus* (*P. hispaniolensis* was not observed) were common, Stonechats and Red-headed Shrikes were seen, *Oenanthe hispanica* rather frequent in the vineyards (? nesting there), and in a small gorge *Athene noctua glaux* was shot by Hachisuka.

We went by the slow but fairly comfortable train down to Colomb Béchar, as we were strongly advised not to risk the car on the bad and sandy roads.

Leaving Aïn-Sefra the railway goes round the Djebel Mekter, in a semicircle, through fine scenery, and then enters a seemingly endless plain. The vegetation gets poorer and poorer, the aspect more and more desert-like. Near Beni-Ounif, the Algerian settlement south of Figuig in Marocco, the peculiar little hillocks of *Anabasis aretioides* become visible, and farther south are sometimes almost the only plants seen from the train for long distances ; they vary in size from small bolsters of the size of a fist to others of three and even sometimes four feet across. Even small plants are almost impossible to pull up, as the roots extend very deep. In other places *Artemisia herba-alba* abounds, but the monotony is often relieved by river-valleys, in which grow the fresh-looking green " Harmal," *Peganum harmala* L., *Zizyphus* bushes, and now and then an

Fig. 4.—LARGE PLANT OF *ANABASIS ARETIOIDES*, SMALLER ONES IN THE DISTANCE.

isolated Terebinth tree, or an oasis with date-palms. On the whole the farther south the more bare and dry, desert-like the country became.

Colomb Béchar, in the south-westernmost corner of Algeria, but more Moroccan than Algerian, is quite a desert town. The surroundings are bare and desert-like, the native villages, mostly in date-palm groves along the river-bed, are picturesque, and fine sand dunes extend some distance to the south. The surrounding mountains are bare and rocky. The resident bird population is not rich. In the town were a few, in the palm groves plenty, of House Sparrows, but no sign of any *hispaniolensis*, a few House Martins were seen, probably nesting, but no nests found, Sand Martins in the river-bed—possibly nesting somewhere on the river bank, but more likely still on migration. The testes were still small. *Corvus corax* once seen, probably *ruficollis*. *Upupa epops* several. *Emberiza striolata sahari* in the town. *Carduelis carduelis africana* and *Erythrospiza githaginea* (once) seen in gardens and on the river. Hachisuka shot one Crested Lark, *Galerida cristata macrorhyncha*, but no others were observed. *Alaemon alaudipes* was once seen south of the town, but not obtained. *Oenanthe deserti* was not rare in the desert, *Oenanthe leucopyga* inhabits the bare

rocks. *Falco biarmicus erlangeri*, *Falco tinnunculus*, *Gyps fulvus*, and *Neophron percnopterus* near the town. *Ammomanes phoenicurus arenicolor* were seen commonly, but still in flocks, testes and ovaries still small, in plain and on sand-covered rocks. *Ammomanes deserti payni*, judging from size of sexual organs, already nesting, or short time before laying. Hachisuka saw *Cursorius*, in the river-bed a pair of Storks. Swallows were numerous.

In spite of the late date (April 17 and 18) migrants were still numerous, flocks of 20–30 of *Calandrella brachydactyla*, quite a number of *Oenanthe oenanthe oenanthe*, flocks of *Motacilla flava flava* on and among the sheep in the river-bed, several *Motacilla alba alba*, *Phylloscopus trochilus* in the gardens of the oasis, *Phoenicurus phoenicurus phoenicurus* common in the gardens, Sand Martins in the river-bed, Hachisuka saw two species of waders, which, however, were not identified.

The stay in Colomb Béchar was not over pleasant, the hotel being not very good, the rooms smelly of leaking acetylene-gas pipes (fortunately the weather was hot and one could open windows and doors), the service—during the Easter holidays—poor. Nevertheless, we regretted that we could not stay longer, as longer excursions, with the help of cars or horses even, might have been very interesting.

On April 19 we took the train back northwards as far as Béni-Ounif. This we found a pleasant place, there being the choice of the excellent but expensive Hôtel Transatlantique and two other, less pretentious, but comfortable and quiet hotels. The ornis was, however, hardly any less poor than at Colomb Béchar. On the way there, north of Colomb Béchar, I observed from the train flocks of *Merops persicus chrysocercus*, *Emberiza striolata sahari*, and twice Houbara Bustards (*Chlamydotis undulata undulata*). French officers in the train told us that the "Poule de Carthage," *Otis tetrax tetrax* L., was not at all rare east of Colomb Béchar, along the Oued Sousfana and in the steppes thereabouts. As they gave a recognisable description and said they knew the Houbara as well, there must be some truth in this, but it seems strange that this Bustard should occur so far south, though it is well known in West Marocco.

At Béni-Ounif House Sparrows, Swallows, and a few Martins were seen in the place, *Corvus corax* (apparently *ruficollis*) in the distance, *Neophron percnopterus*, *Ammomanes deserti payni*, *Ammomanes phoen. arenicolor*, where there were *Zizyphus* a few Grey Shrikes (*Lanius e. elegans*), a flock of *Cursorius cursor cursor*. There were still a good many migrants : *Phylloscopi* (mostly *trochilus*), ♂♀ *Muscicapa luctuosa luctuosa*, *Calandrella brachydactyla*, *Oenanthe oenanthe oenanthe*, *Phoenicurus phoenicurus phoenicurus*.

A delightful excursion is to the Berber town of Figuig in Marocco. This is a large oasis of over 15,000 inhabitants, and beautifully situated on a steep hill, the whole place surrounded by crenellated walls and full of fine gardens with tall date-palms and other fruit-trees. The houses are often built in two stories, as I have only seen them in the villages of the Great Atlas in Marocco, but not usually in the more northern parts of Marocco. In the palm gardens we looked in vain for *Streptopelia senegalensis phoenicophila*, the palm Dove so well known from the northern Algerian Sahara, while Turtle Doves were common. The people in the oasis were very friendly though not at all cheeky. In one of the gardens we saw a Great Tit, but could not shoot it. On a building in the outskirts I saw an *Oenanthe leucura syenitica* at close quarters and we

observed *Merops apiaster* and several *Merops persicus chrysocercus*, of which I had never seen a specimen in West Algeria or from Maroceo.

Passer domesticus tingitanus and *Emberiza striolata sahari* were eommon.

Near Béni-Ounif migrants were still observed: *Phoenicurus phoenicurus phoenicurus*, *Phylloscopus*, Pied Flyeatehers, as late as April 22.

From Beni-Ounif we continued our journey northwards to Aïn-Sefra. We found hotel accommodation worse than in 1913. Birds were less numerous, probably on aeeount of the drought. Two days diligent seareh in the well-known loealities did not reveal *Rhamphocorys clot-bey*, nor did the Rev. F. C. R. Jourdain

Fig. 5.—STORKS ON OLD WALL OF EL-HAJEB.

find it there! *Oenanthe deserti* and *Erythrospiza githaginea* were present, but less numerous, both species of *Ammomanes*, *Scotocerca*, *Oenanthe moesta* were found. Of the latter Haehisuka shot a male, while I have neither note nor reeolleetion of having seen it in 1913 at Aïn-Sefra. Also Ravens, obviously *C. c. tingitanus*, were seen several times, though in 1913 we never observed a single one.

From Aïn-Sefra we returned to Masoara, thence we motored to Sidi-bel-Abbès, where we passed a eomfortable night. Sidi-bel-Abbès, known as the headquarters of a regiment of the Foreign Legion, is a town of about 38,000 inhabitants, and is situated in one of the most fertile plains of Algeria. For an

ornithologist the surroundings are even less interesting than those of Mascara, as they are mostly fields of wheat, also fruit-gardens and vineyards. From this town we motored to Oudjda crossing the Moroccan frontier soon after Lalla Marnia, where there was the usual delay at the customs house, though we were very considerately treated. At Tlemcen we enjoyed the beautiful scenery and had luncheon in the excellently situated Transatlantique Hotel outside the town. West of Oudjda the country became drier—we entered what I called (cf. NOV. ZOOL. xxxiv, 1927, p. 46) the "Desert Wedge," i.e. hammada-like country with very few trees. The end of this "wedge" reaches right up to north of Guercif, and a little west of Guercif occurs *Oenanthe moesta moesta*, of which Hachisuka shot a young of the year. West of Oujda I shot two *Galerida cristata* of very different aspect, one being much darker than the other (see list).

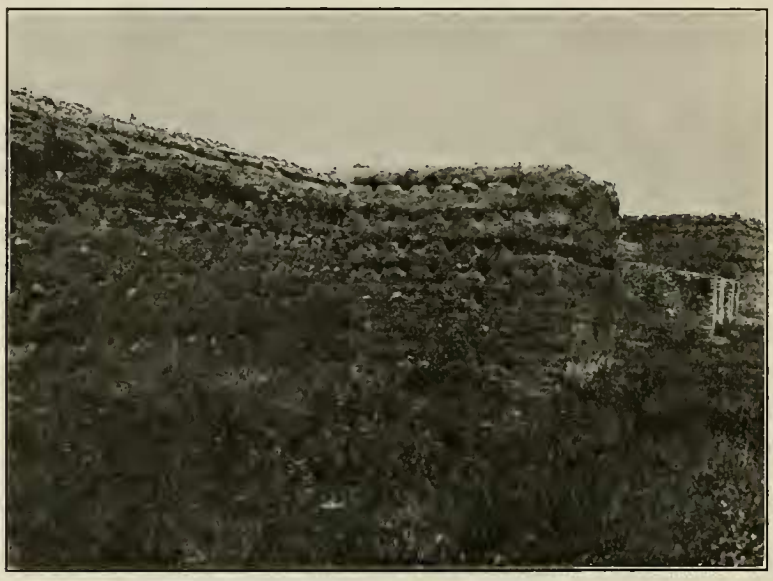

FIG. 6.—OLD WALL OF EL-HAJEB WITH HOLES IN WHICH NEST *FALCO NAUMANNI* AND ROLLERS.

The Angad plain I found more cultivated, with more corn growing, than in 1913, when we visited the eastern parts of it.

After passing the Moulouya at Guersif and two little affluents to the latter, a change was very obvious, as we entered more fertile country again, when we saw the first river flowing westwards, a tributary of the Oued Sebou, which enters the Atlantic Ocean near Mehedia—we had entered the West Moroccan zone! After a number of mishaps to the ear we reached the wonderful city of Fez (Fès) after eight o'clock in the evening and found comfortable quarters in the Hôtel Transatlantique. It is not here the place to describe this most interesting and peculiar Moroccan town of far over 100,000 inhabitants. Of birds we observed great numbers of Alpine Swifts—of the dark form (see list), only Black Common Swifts, and a few Lesser Kestrels. On April 29 we went to Meknès, visited General Freydenberg, and proceeded to El-Hajeb, on the north-western slopes of the Middle Atlas. Besides the small colony of *Comatibis eremita*, dis-

covered by Bédé near this picturesque little place, there is a bigger one near by. We could not reach the nests, nor could we get any boy to climb up, because everybody attended the great "fantasia," in the plains; great numbers of natives assembled there, thousands of shots were fired for several days, singing and furious riding, feasting, etc., so no native help could be obtained. On the old walls of El-Hajeb Storks nested in numbers, and in the holes numerous Lesser Kestrels and Rollers.

From El-Hajeb we returned after a couple of days to Meknès and thence to Rabat, where we saw our old friends again, and fetched Frederick Young from Casablanca on May 4.

On May 5 we visited again the swamp at the mouth of the Bou Reg-reg, where *Circus pygargus* nest, and again I found *Asio capensis tingitanus* and

Fig. 7.—Signpost on roads in western French Marocco, visible from far.

Cisticola and saw half a dozen *Numenius arquatus arquatus*. On May 6 we travelled down to Marrakesh. In the Rehamna, not very far north of Marrakesh, we saw some *Cursorius*, but more were observed in June, when returning for the second time from Marrakesh. The Short-toed Larks in the Rehamna plain, which we formerly thought were *Calandrella rufescens minor*, seemed all to be *C. brachydactyla hermonensis*, at least those we shot belonged to the latter. We had some delay at Casablanca, an uninteresting city for a naturalist, where, however, the excellent restaurant called "Le Roi des Bières" is a redeeming factor. The main roads (not of course the side-tracks or "pistes") are very good in Marocco, even better than most of them in Algeria, and they are marked with very practical and conspicuous "signposts."

At Marrakesh the weather was glorious and not yet too hot. We spent three days there and collected in the immediate neighbourhood and on the Tensift River. The birds were of course the same as in 1925 (see *Mém. Soc. Sc. Nat. Maroc*, No. XVI, p. 4, 1927), but quite a number of *Muscicapa striata*

and *Sylvia borin* were apparently still on migration. On the Tensift River several Kingfishers were seen. Near Marrakesh the rare *Polyommatus phoebus*, of which we saw only a few in 1925, was common in certain places, and for the first time I observed and caught *Euchloë charlonia* in this part of Morocco.

Via Rabat we went to Ouldjet-es-Soltane on the Upper Oued Beth, where we were kindly put up by the garde forestier, Monsieur Azam. I had been told that Guinea-fowls were common, but they were far away, and in spite of several long rides on excellent horses we did not see a single one, though I heard one from a distance, and Berbers brought in two damaged specimens, and I got a beautiful clutch of eggs. The ornis of this part is rather rich. The first evening a heavy thunderstorm raged, so that for several days we could not cross the river. *Circaëtus* and *Neophron* were seen every day, *Alectoris barbara* and Turtle-doves were common, Hachisuka shot in the twilight both *Caprimulgus ruficollis ruficollis* and *europaeus meridionalis*, Cuckoos were present, and lots of common birds. There were not so many Butterflies as I would have expected, but both species of *Gonepteryx* were seen.

There was only observed one species of *Parus*, i.e. *major*; the woods consisted mostly of *Callitris articulata* (Vahl.) Murb. (so named by Professor Maire),[1] and there were neither Cedars nor Oaks. The valley where Ouldjet-es-Soltane lies is very fertile, the corn was just being cut. A nasty kind of burr penetrated trousers and irritated legs. Of remarkable plants *Ephedra altissima* Desf. and *Asparagus altissimus* may be mentioned.

The migratory European birds had passed through, but *Oenanthe oenanthe oenanthe* was still obtained. One day we had dinner, lasting about two hours and a half, in a Berber tent, consisting of a number of dishes of mutton, the usual cuscus, and a kind of pancake, all very fat, and we had to drink seven glasses of very sweet mint-tea and dirty river water.

On May 18 we returned to Rabat, having luncheon with our friends the Poussiers in Khemisset, and enjoying their beautifully laid-out gardens with a wealth of flowers, vegetables, and fruit.

While the main road from Meknès to Rabat, and most main roads in Morocco are excellent, the "piste" to Ouldjet-es-Soltane was bad and often dangerous, but our friend Hachisuka managed it with the greatest skill and sang froid.

Mr. Hachisuka was obliged to return to Europe and left us, via Tanger.

In Rabat were this year several pairs of *Hirundo daurica rufula*, but the old nest I saw in 1925 was forsaken, though much enlarged again, having been used for three years.

May 23 Young and I went up again to El-Hajeb. Between Khemisset and the Oued Beth both of us clearly saw (not very far from the Oued Beth Valley) a *Merops persicus chrysocercus* sitting on a telegraph wire.

On the wonderful cliffs near El-Hajeb, where the *Comatibis* nest, Blue Rock Thrushes were not rare, there were also several pairs of *Oenanthe leucura syenitica*, and on the plains *theklae* Crested Larks. On May 23 I saw an *Aquila chrysaëtos*, but on May 24 a pair of Eagles were observed, which, judging from the rich, almost orange-coloured underside, seemed to be *Aquila heliaca adalberti*! At least, I do not know what else they were; they could certainly not have been *Aquila rapax*! Unfortunately they were flying far and high, and on all the

[1] The plants of which I brought home samples were kindly named by Professor Maire in Alger, to whom my sincerest thanks are due.

subsequent days I did not see them again. On the 28th two *Anthropoides virgo* flew past El-Hajeb, calling loudly, in the direction of Meknès. I also saw a skin of *A. virgo* shot near Aïn-Leuh by the Commandant, Monsieur Ayard.

The weather was fine; the abundance of water caused this part of the country to look much fresher than the plains, and it was less hot than, for example, at Meknès; the nights, in fact, were sometimes quite cool, and there was heavy dew in the mornings. Many flowers adorned the rocks, among which *Bellardia trixago* var. *flaviflora* (Rouy) Maire, *Spergularia longipes* Lange and others seemed to me peculiar.

On the 30th we returned once more to Rabat. Passing through the forest of Mamora, we were pleased to see it nearly all green, only here and there, and

Fig. 8.—ROCKS WHERE *COMATIBIS* NEST FROM DISTANCE.

in one limited place many oak-trees being defoliated by the caterpillars of *Porthetria dispar,* while in 1924, at the same time of the year, nearly every oak-tree I saw was bare.

On June 2 we rode down again to Marrakesh in a C.T.M. car. We left Rabat at 10, arrived Casablanca at 12, left Casablanca at 1.30, and arrived in Marrakesh at 7.15 in the evening. North of Marrakesh we saw a number of *Cursorius.* I wanted to visit Telouet, the Pasha of the Glaoui's place, but did not get permission to do so, because smallpox and typhoid had broken out there. I went, however, into the Great Atlas, south-east of Marrakesh, up the valley of the Oued Rdat. Passing the (then) highest military poste of Areg-n-Anou (or simply called Areg), we met Lieutenant Olive, who most kindly assisted us by sending a bed, blankets, and sheets, so that we could stay in a large tent with a wooden floor by the river under the village of Taddert, 1,650 m. high. We got good food in the "cantine" at Taddert, only about ten minutes away, though we had to cross the river on not too convenient stepping-stones, and to climb up or slide down a steep stony slope with loose slabs of stone.

Monsieur Dereims, the cantinier, cooked as well for us as it could be possible in this isolated spot, but unfortunately our tent was alive with many hundreds of fleas, not to mention an occasional, nasty, but quite rare flat and smelly insect, to relieve the monotony of the countless "fathers of the jump," which seem to swarm all over the Great Atlas in the summer months. This part of the Atlas is not wooded, only in one spot farther down we passed a thin wood of Oaks. The road in the valley of the Rdat runs with the river and the slopes on both sides are usually steep and bare, only in some side valleys were little tributaries come down, but are mostly dry in summer, one sees some junipers. The wild vegetation was fairly rich, high bushes of *Retama dasycarpa* Coss. em. Maire being very numerous, also *Adenocarpus anagyrifolius* var. *leiocarpus* R. Lit. et

FIG. 9.—ON SIDE OF ROAD IN THE RDAT VALLEY, TO SHOW STEEP SIDES.

Maire, which from a distance reminds one of the *Cytisus battandieri* of the Middle Atlas. The villages have many old Walnut trees of often enormous size and stems sometimes several metres thick. Many are damaged by wind or lightning and have grown in strange shapes. Unfortunately at Taddert there would be no Walnut this year, as a late frost had destroyed all young fruit, but at Areg, 220 m. deeper down, they were not touched. The scenery is beautiful, mountains towering high on either side, and the weather was perfect. There were, however, not very many birds, and no rare species. Though the river seemed to be ideal for them, there are no *Cinclus* in the valley, but one saw now and then a Grey Wagtail or two (*Motacilla cinerea* (*boarula*)). There were no Sparrows and no Sahara- (or House-) Buntings (*Emberiza striolata sahari*) in the villages. Among the Walnut trees lived a few *Fringilla coelebs africana*, Goldfinches, very few *Parus major lynesi*, some *Muscicapa striata*, and one pair of *Serinus*, a few *Coracias garrulus*. Once in the evening a *Caprimulgus europaeus meridionalis* flew along the village road, and sometimes Kestrels were seen. On the mountains one saw

Buteo rufinus cirtensis, *Milvus migrans*, *Neophron* and Ravens, by the river a few Nightingales and Blackbirds. On the rocks above the road nested *Diplootocus moussieri* and *Oenanthe leucura*, while a dog that used to accompany us put up several times some *Alectoris barbara barbara*.

On June 10 I accompanied Lieutenant Olive on a ride to the Tizi N' Tichka, 2,425 m. high, often along steep mountain-sides with wonderful scenery. We passed a very high waterfall with very little water, which earlier in the year must be a magnificent sight. The Tizi N' Tichka is a pass over a pleasant grass-covered plateau with a splendid view all round, but specially of the 3,575 m. high Djebel Aouldjidit or Bou Ourioul, still with extensive patches of snow. The Tizi N' Tichka is on the watershed between the streams flowing

Fig. 10.—Tizi n'Tichka pass and Djebel Bou Ourioul.

northwards towards the Rdat, and those running southwards to the upper reaches of the almost unknown and legendary Oued Dra! The Tizi is only 12 km. in a straight line, and 26 km. by the road, from Telouet, the mediaeval castle of the powerful Pasha of the Glaoui. Over the Tizi I saw a large flock of Red-billed Chough, *Pyrrhocorax pyrrhocorax*, but no other remarkable birds. The vegetation differed a great deal from that of Taddert, which is about 770 m. lower. Instead of the *Retama dasycarpa* Coss. em. Maire, common near Taddert, I found golden yellow bushes of *Genista florida* var. *maroccana* Ball, and, to my great surprise, *Artemisia herba-alba*, a plant of the Haut Plateaux of Algeria, but not of the mountains above 2,000 m., I thought. Other plants of the Tizi N' Tichka were *Glaucium corniculatum* Curt., *Campanula filicaulis* Dur. = *C. maroccana* Ball, *Papaver atlanticum* (Ball), *Orchis elata* Poiret, *Helianthemum glaucum* Pers., *Dianthus caryophyllus virgineus* R. et F. var. *godronianus* Briq., *Armeria allioides* Boiss., the very pretty *Mentha gattefossei* Maire, *Pterocephalus depressus* Coss., *Thymus satureioides* var. *pseudo-mastictina* Ball, but my time—

a few hours!—was too short to make any adequate collection! It is strange that the number of Lepidoptera was not greater! There were some species in fair numbers in the valley of the Rdat, but nothing very wonderful. On the Tizi N' Tichka it was probably too early; I caught, of course, what I could, and obtained one single *Zygaena*, while there were none found at Taddert, notwithstanding most diligent search. I saw also a form of *Satyrus abdelkader*—a single individual—but could not catch it as it flew down an awe-inspiring steep cliff of several hundred metres.

Also near Taddert, ± 1,700 m., the Butterflies were not remarkable for the number of species, and apparently some of the rarest forms were not yet out—in fact Lieut. Olive wrote me that in August they were much more numerous. On the *Retama dasycarpa* the caterpillars of *Apopestes spectrum* Esp. were exceedingly common, in all sizes, also a large species of a Cicada, very very numerous, and when one touched a bush they flew off with a loud rattling noise. Several species of large *Buprestidae* occurred, one of them a rare one, restricted, my friend Théry tells me, to the Great Atlas.

On June 12 we returned to Marrakesh and spent the 13th catching butterflies. *Palyommatus phoebus* was still in existence, but specimens were getting worn. Though I measured at 6 p.m. only 30° C. it was very close, the sun not appearing before 10 a.m. The vegetation in the open was fast drying up, but in the new gardens many flowers were in bloom, among which I particularly admired the introduced foreign *Jacaranda mimosifolia* and *Parkinsonia aculcata*. On June 14 motored again into the Great Atlas, through a fine river-valley to Tagadirt-N' Bour. This valley too had very steep sides, hardly any butterflies were seen, and bird-life consisted only of the forms known to me. Over the village (kasbah) we saw a *Gypaëtos*, apparently two years old, and near by some Blue Rock Thrushes. The room we were told we could get at the Sheik's place was occupied by a French painter, and no other decent place was available. While we had tea with the son of the Sheik, in a hole not fit for human beings, fleas ran up our legs and the smell of goats and worse things was abominable. So we returned to the region of Asni, almost opposite, on the other side of the river, to Asselda, where we stayed in 1925, and found rooms in a new, very modest, but decent hotel, the "Asni Hotel."

The Berbers were just cutting their corn, and the population was mostly out in the fields. Great flocks of Wood Pigeons, Rock Doves, and Stock Doves fell into the fields to eat the corn—as there were no woods with suitable nesting-places, the Stock Doves must have come from far away. Also *Bubulcus ibis* came to the river, a big flock, but they are said to occur there only rarely. Young of the year of *Muscicapa striata*, *Motacilla alba subpersonata*, *Oenanthe hispanica*, *Diplootocus moussieri*, Stonechats, and other common birds were observed, but nothing very remarkable, nor anything wonderful in butterflies, while no moths came to the light.

June 17 returned to Marrakesh, where we found it rather hot. I don't think the thermometer went above 33° C., but we missed the fresh mountain air of the Atlas. The drive to the coast, to Casablanca and Rabat was also hot, and so was Rabat.

From Rabat we returned to Gibraltar, and from there to England. Thus ended another most interesting and pleasant tour in Africa Minor, the land which I love.

NOTES ON CERTAIN BIRDS COLLECTED AND OBSERVED.

Corvus corax tingitanus Irby.

At Aïn-Sefra in West Algeria Ravens were not rare, while in 1913 we never saw one there.

Ravens observed at Colomb Béchar and Beni Ounif were probably *C. c. ruficollis*.

Pica pica mauritanica Malh.

Not rare on the Upper Oued Beth, near Ouldjet-es-Soltane.

Pyrrhocorax pyrrhocorax pontifex Stres. (?).

It is strange that the Chough has not been recorded from Tunisia since Salwin's visit there, but Monsieur Blanchet has recently had information about the probable occurrence in North-West Tunisia, near the Algerian frontier.

In the Great Atlas I have only once seen a flock, and that was on June 10, at 2,400 m. on the Tizi-N-Tichka, when a large flock was seen high overhead.

The subspecies of the Chough have not been worked out satisfactorily. In *Vög. pal. Fauna*, i, p. 36, 1903, I had insufficient material, and refrained from seriously discussing them. Everybody, myself included, has so far shirked the study of their forms, but *P. p. himalayanus* and *P. p. brachypus* have recently been recognised as distinct (Kleinschmidt, Meinertzhagen, La Touche, Stresemann). In fact, the latter two subspecies are the most distinct ones, the others being more difficult to distinguish. Recently Stresemann separated two more subspecies, *P. p. pontifex* from North Persia, and *P. p. centralis* from the Tian-Shan Mountains.

In naming *P. p. pontifex* he has not helped his brother ornithologists much, as he does not say how far he thinks that this subspecies extends! It seems to me that it is the widest spread and thus "commonest" form of the Chough.

Stresemann's *P. p. centralis* is a very well-marked subspecies, but it is rather misleading to compare it with the large *himalayanus*, as one of its most striking peculiarities are the small feet; therefore it should have been compared with *brachypus*, which, however, has a thicker bill and less pointed wing. As far as I can at present construct the subspecies of the Chough—though I do not say that this review is final!—I think the following forms can be distinguished:

Pyrrhocorax pyrrhocorax pyrrhocorax (L.).

Described by Linnaeus as coming from England and Egypt; the latter locality being doubtful, I have in 1903 restricted the terra typica to England.

This is the smallest form, bill 50–58, wing 253–260 and 276 mm. maximum.

I know this form only from Great Britain (where it has become rare and is now restricted to a few localities in the south and west) and Ireland, where it is still fairly common.

Pyrrhocorax pyrrhocorax erythrorhamphus (Vieill.).

This name refers to the Alpine form and must be accepted, if this form is separated from the British one. Unfortunately this species is now so very

rare in the Alps (apparently it was formerly more numerous), that specimens are rare in collections; I could therefore measure only 5 good specimens. Their bills measure 51–57, wings 278, 287, 288, 291 mm., a maximum which is not reached in the British Isles. I believe the Spanish form is the same as the Alpine form, but about this I am doubtful. Certainly Pyrenean specimens agree.

Pyrrhocorax pyrrhocorax pontifex Stres.

Pyrrhocorax pyrrhocorax pontifex Stresemann, *Journ. f. Orn.* 1928, p. 343 (Elburs Mountains, North Persia).

It seems to me impossible that this is an isolated Elburs form. In fact, it seems to be widely spread, possibly from Palma (Canary Islands) through Marocco, Algeria, Palestine, Crete, Asia Minor, Palestine to Persia. I measured as follows:

Palma 290, 291, 295 mm. (Eight.)
Marocco 280–313 mm., bill 54–69. (Series.)
Algeria 288–307 mm., bill 59–64, 66. (Series.)
Crete ♂ 311, ♀ 293 mm.
Asia Minor (Taurus) 304, 323 mm.
Luristan ♂ 305, 308 mm.
Persia (East Persia) ♀ 290, 294, ♂ 310, 320 mm.
Persia (Shiraz, East Persia) 288, 314, 316 mm.
Persia (Elburs) 305, 317; 293, 305, 318, 320, 327 mm.
Palestine 290–313, 326 mm., bill 52–59.
Simien, Abyssinia, 308 mm.

It will be seen that the specimens from nearly all countries mentioned come very close to the Elburs ones, of which only one surpasses them. But we must remember that, except from the British Isles (Ireland), Algeria and Marocco, anything like a sufficient series is available from nowhere, and that therefore we do not know the maxima, which by accident might have been found among the few from the Elburs, and possibly the large bird from there was an exceptional giant.

The small size of the Palma birds might, if confirmed by a larger series, force us to recognise the Palma form as a special subspecies, but I had formerly a very large measure of a Palma specimen—unfortunately I have no note how I got that measure, but I believe from Sharpe, in litt.

Abyssinian specimens I have not examined, except the one in the British Museum, that came from Petherick; that skin passed through Gould's hands, and it surely never came, as Sharpe said (p. 148, *Cat. B. Brit. Mus.* iii), from the Kitch country "west of the Nile." "Lemien" means doubtless Semien, where alone in East Africa the species is found, and it was possibly given to Petherick by Heuglin, who collected specimens in Semien.

All these birds have more or less greenish wing-coverts, but a purplish tinge is sometimes discernible in Persian examples.

Pyrrhocorax pyrrhocorax himalayanus (Gould.).

This race has a somewhat bluish or purplish gloss on the wings, more distinct than in Persian ones, and is large, wings 305–327 mm., sometimes smaller, according to Kleinschmidt down to 278 mm., and has generally a large bill.

On an average it surpasses topotypical *pontifex* in size of wings and bill, but some specimens are not distinguishable, except by the *generally* more bluish wing-coverts. Bill 59–65 mm.

Himalaya, at great elevations, eastwards to Yunnan and Setchuan.

Pyrrhocorax pyrrhocorax centralis Stres.

Pyrrhocorax pyrrhocorax centralis Stresemann, *Journ. f. Orn.* 1928, p. 344 (Tian-shan).

These birds are on an average smaller than most *pontifex* and *himalayanus*, but many do not differ in length of wing. They have the greenish outer aspect of the wings, but their feet are as small as those of *brachypus*, from which, however, they differ by the more pointed wing, the distances between the tips of the fifth and sixth primaries being greater! They are apparently common in parts of Turkestan, near Djarkent, mountains near Lake Issik Kul, Karakol, and doubtless many other places. Wings of the specimens in Tring 278–313 (once), according to Stresemann 276 (♀) to 319 (♂, once) mm.

Pyrrhocorax pyrrhocorax brachypus (Swinh.).

North-East Chinese Choughs are very much like *P. p. centralis*, but the tip of the wing is shorter (distance between tips of fifth and sixth primaries smaller), and the bill is generally thicker. Wings 273–305 (twice) mm. Feet smaller than all except *centralis*.

North-East China, apparently north to Transbaicalia, Shansi, Shensi.

Swinhoe gave this form 1871 the name var. *brachypus*. Sharpe (*Cat. B.* iii) quotes the name "var. *orientalis*," as of Dybowski, *Journ. f. Orn.* 1868, p. 332, but this is incorrect; Dybowski there described the small feet, but does not give a name! The name "var. *orientalis*" is given by Taczanowski, *Journ. f. Orn.* 1872, p. 454 (not by Dybowski, p. 445 as Taczanowski quoted in his posthumous great work, p. 539), but without any kind of characterisation or reference, and is therefore a nomen nudum.

It inhabits the mountains of Chihli, and Weigold brought one home that was collected in Shansi, where Swinhoe had formerly also found it.

I have not examined Mongolian specimens.

Sturnus vulgaris vulgaris L.

Still seen in small flocks on the Algerian Plateau between Constantine and les Lacs on April 1.

Bucanetes githaginea zedlitzi Neum.

As already pointed out by Lavauden (*Voy. Babault, Ois*, p. 50), this species ranges in Tunisia north to the Djebel Cherichera, north-west of Kairouan. We did not find it during the hours we were there, probably because of the drought at the time, but both Lavauden and Blanchet have collected it there, and the latter presented me with a skin from there. This pretty Finch seems to need water, for it visits wells and cisterns, as observed by Lynes and myself. The flocking together in spring is probably done for going to places where they can drink—apparently these flocks go for miles to water.

I think we must agree with Lynes, who said that the specimens he collected in the stony plain near Tiznit—and the one I mentioned before as doubtful from Tizi in the Great Atlas—belong to *B. g. amantum* (Hart.) which inhabits the Canary Islands. In shortness of wing and thickness of bill they are *amantum*, but their back is (in worn plumage) lighter ! On the other hand, those collected near Aïn-Sefra in West Algeria are *B. g. zedlitzi*, which is a very distinct subspecies.

In Marocco this bird seems also to be restricted to the south of the Great Atlas ; I never came across it in the Great Atlas, but two officers described it to me as having been seen on the south slopes of the Atlas.

As I have said, *zedlitzi* is a quite distinct subspecies, but the specimen said to be from " Constantine," in the Berlin Museum, most certainly never came from the neighbourhood of Constantine town, though from the province of Constantine. What I said about the length of the wings is perfectly correct, that of the female being about 5 mm. shorter, and if there are supposed pairs shot by Zedlitz with wings equal in the sexes, there must be some error about this.

Passer hispaniolensis hispaniolensis Temm.

When formerly writing about the Sparrows of Africa Minor I had not realised the fact that in Eastern Tunisia no *domesticus tingitanus* occurs, while *hispaniolensis* is very common in the towns (where, as a rule, they roost) and in the agricultural parts of the country. Only in the south of Tunisia we find that these Sparrows lose the stripes, which are the most characteristic feature of *hispaniolensis*, to a great extent, and in places entirely. Among these red-headed sparrows without stripes on the sides, there are, however, some that have stripes, so that this race is not absolutely fixed (*Ibis* Suppl. 1927, pp. 60–66). In none of those from South Tunisia is there an obvious admixture of *domesticus* !

How do these facts now agree with our theory that the *flückigeri*-type is the result of hybridisation of *hispaniolensis* and *domesticus*, established on observations and collections made in Algeria ?

That hybridisation takes place is, in my opinion, not doubtful ; not only do we—except in South Tunisia—never find these varieties (red-headed without stripes and males with crowns partially grey, partially red) in places where only either *hispaniolensis* or *domesticus* is found, but we also find many intermediate specimens (cf. Nov. Zool. xviii, 1912, and xx, 1913). How can it be explained, then, that in El-Oued only the *flückigeri*-type was found, and this is also the case in most of the South Tunisian oases ? I think we can assume, that in El-Oued, as well as (more or less) in Ouargla and nearly so in Tonggourt, the parents have died out, and that this bastard-race, which breeds true, or nearly so, became established, and that this bastard-race has spread eastwards through South Tunisia. There can hardly be any doubt that in the course of time this race will become exclusive in these southern regions ; I do not see how we can avoid recognising it in that case, by a name, the oldest of which is *flückigeri !* It will then perhaps be treated as a subspecies of *hispaniolensis*, though it is not, strictly speaking, of the same footing as other subspecies, which we regard as geographical forms, the results of surroundings, climate, and other local conditions.

Some modern ornithologists look upon *Passer hispaniolensis* and *domesticus*

as subspecies. This is, in my opinion, most misleading. Subspecies are geographical forms representing each other.

These two Sparrows, however, do not do this. Except on a few small islands and along the coast-stripe of eastern Tunisia *hispaniolensis* does not represent *domesticus* anywhere ; in the range of *Passer domesticus* it inhabits similar geographical areas from the utmost west eastwards to Turkestan, Afghanistan, and Kashmir, but in northern regions and in tropical India *domesticus* becomes the exclusive form !

How did it happen that in Algeria such broadcast hybridisation took place ? We cannot definitely say this, but it seems to me that it originated in their living together in the same conditions. In other countries this is apparently not the case. In Spain, Palestine, etc., *P. hispaniolensis* breeds chiefly in bushes and trees, gardens, and Eucalyptus growths, away from the towns, making the free nests which we know so well in our countries as those of *P. domesticus*, which is, however, more or less a frequenter of towns and nests to a large extent on buildings, also usurping swallows and martins' nests, nesting-boxes, water-pipes, and other unwelcome sites. Now where these two species live together, I would be more astonished if they never hybridised. They have females so much alike that one can hardly distinguish them, they have the same notes, except that that of *hispaniolensis* is a little higher, mellower, and they have the same dimensions.

In spite of continual attention I have never seen *Passer hispaniolensis* in Marocco, except in April 1901 in the Mehuila, the extended orange wood on the banks of the Oum-er-Rebbia east of Mazagan, where it is common. Riggenbach sent it from Bou Laouane on the Oum-er-Rebbia south-east of Mazagan, Djebel Chedar, and Mogador, also from the Mehuila. Bédé records it from Oudjda in North-East Marocco, near the Moroccan boundary.

Emberiza striolata sahari Lev.

Nests in Figuig and Béni-Ounif, as well as in Aïn-Sefra. While it is so common and tame in Marrakesh, where it sometimes enters restaurants, pecking up crumbs, and sitting on the tables, or bedrooms, nesting chiefly in native houses, and is found at Asselda in the Great Atlas, it was not observed at or near Taddert in the valley of the R'dat.

Calandrella brachydactyla hermonensis Tristr.

The specimens of *Calandrella* we shot in the Rehamna north of Marrakesh were this and not *rufescens minor*. Possibly the birds seen there by Lynes and myself and which we thought might have been *rufescens minor* were all *brachydactyla* !

Ammomanes phoenicurus arenicolor (Sund.).

Common near Colomb Béchar on April 17 and 18, but still in flocks : testes and ovaries winter size or very very little enlarged.

A few were also seen at Béni-Ounif, where it has also been recorded by Messrs. Foley and Géard, under the name of "*cinctura*," a name referring to the subspecies from the Cape Verde Islands !

Ammomanes deserti payni Hart.

We found this bird at Aïn-Sefra and Béni-Ounif. Monsieur Bédé (*Mém. Soc. Sci. Nat. Maroc*, No. xvi, p. 67, 1927) says that Admiral Lynes informed him that he had collected *A. phoenicurus arenicolor* at Misour on the Muluya River, but this was a slip of the pen of the Admiral, the birds he saw and collected being *A. deserti payni*. The birds mentioned by Bédé (l.c.) as *A. deserti algeriensis* from Outat-el-Hadj on the Muluya were also *payni*, as our friend would see, if he again compared them with Tunisian specimens.

Messrs. Foley and Géard (*Bull. Soc. Hist. Nat. Afrique du Nord*, xviii, p. 181) recorded from Béni-Ounif both *A. deserti algeriensis* and *A. deserti intermedia* Heim de Balsac, both from other parts of Algeria, neither of them being found at Béni-Ounif.

Galerida cristata.

The knowledge of the forms of Crested Larks grows gradually, if slowly. In 1903–4 when I wrote about the *Galeridae* in my *Vög. pal. Fauna*, I still united North Tunisian long-billed *Galeridae* with *macrorhyncha*. These were afterwards, 1905, separated as *G. c. carthaginis* by Kleinschmidt & Hilgert, though the type was *not* shot near Carthage, but was a specimen from the neighbourhood of Tunis, bought from Monsieur Blanc—a very dangerous and censurable proceeding. This form was, as far as I am aware, never found outside of Tunisia. It is common along the Sahel and south to the plain of Achichina south of Sfax, being replaced by the so-called *G. c. gafsae* Kleinschm. & Hilg. farther southwards. Here, too, the two authors called the type of the subspecies from the Seggi *gafsae*, not a specimen shot at Gafsa! In this case this has caused much misunderstanding, as the form from Gafsa is *arenicola*!

Erlanger had *carthaginis* from Tunis, Kairouan, and west of Souk-el-Arba. I also shot it on the slopes west of Souk-el-Arba, close to the Algerian frontier. Further west it was not known! In spite of diligent search Lord Rothschild, Hilgert, and myself have never turned up a Long-billed Crested Lark, *G. cristata*, in North Algeria proper, i.e. in the Tell-region. Yet I have no doubt that it will be found sparingly along the Tell from Tunisia to Marocco, because I have last year shot an adult male, April 14, west of Orléansville, and another adult male on April 27 west of Oudjda, west of the plain of Angad, in North-West Marocco. In each case two were seen, evidently pairs, but only one could be obtained. It is not astonishing that the occurrence of *cristata* in the coastal plains and hills has been overlooked. It is probably only a bird of the plains, not of the hills, it is obviously rare, and at a distance it is difficult or impossible to distinguish it from the common *theklae* forms found in the same places. And, worst of all, very little collecting has been done in these northern regions—most modern collectors, from Koenig to the present day, have been attracted by the southern desert-countries and neglected the northern belt as well as the highest mountains!

After shooting the specimens of *G. c. carthaginis* west of Oudjda Hachisuka and I were on the look out for more Long-billed Crested Larks, but, unfortunately that day, April 27, we made by far the longest journey, from Oudjda to Fez, in one day! Therefore we could not delay for hours, where it would have been desirable, and we had to go too fast for careful observation. Nevertheless, we looked at every Crested Lark, but all seemed, and doubtless most of them were,

short-billed *theklae*, not *cristata*. But a little west of the Muluya River, not far from Guercif, we saw again two long-billed *cristata* and shot one of them. This, however, is much darker than the one from west of Oudjda, and it is in fact *Galerida cristata kleinschmidti* Erl., hitherto known from the Tanger region, near the forest of Mamora, and in the upper reaches of the Bou-regreg River.

While we saw no Long-billed *Galeridae* near Aïn-Sefra and near Béni-Ounif, Hachisuka shot a male (breeding condition) among the sand dunes and date-palms at Colomb Béchar on April 18. This is the only Crested Lark seen there by us with certainty, and it belongs to the southern subspecies, *G. cristata macrorhyncha* Tristr. (represented farther eastwards by the very closely allied *arenicola*).

It seems therefore that the distribution of the forms of *G. cristata* in Africa Minor is as follows :

G. cristata déprimozi Lavaud. : Kerkennah Islands.

(We have a few specimens from Monsieur Bédé, but unfortunately they are either bad skins or collected end of June, when in horrible condition).

G. cristata gafsae Kleinschm. & Hilg. : From the island of Djerba to the eastern Bled Seggi.

G. cristata carthaginis Kleinschm. & Hilg. : Northern Tunisia to North-West Marocco—probably sparingly all along the Tell.

G. cristata randonii Loche : Hauts Plateaux of Algeria (so far only known from Aïn-Oussera between Alger and Laghouat) to Missour on the Muluya.

G. cristata arenicola Tristr. : From Gafsa in Tunisia to about N'goussa north of Ouargla and the plain of El-Outaya south of El-Kantara.

G. cristata macrorhyncha Tristr. : This very closely allied form replaces *arenicola* farther west, in the Mzab country, and is common in and about Ghardaïa, Laghouat, etc. It evidently extends westwards into Marocco, as we got one at Colomb Béchar, near the Moroccan boundary.

G. cristata kleinschmidti Erl. : North Marocco eastwards to the watershed between Muluya and Sebou (waters running to Mediterranean and Atlantic respectively), south to upper reaches of Oued Beth and Bou-Regreg, Mamora, and probably farther southwards.

G. cristata riggenbachi Hart. : Replaces the former from the valley of the Oum-er-Rebbia southwards to the Sous (Lynes), but absent from high altitudes.

Galerida theklae.

Generally the Short-billed *theklae* vary more individually than the fairly constant *cristata* and they are therefore somewhat difficult to limit. The " dusting " in sand and soil colours the plumage in the same way as the *cristata* forms.

Galerida theklae harterti Erl. : In North Tunisia *G. theklae harterti* Erl. is common. It extends over North Algeria, i.e. the coastal plain and Atlas Mountains (Tell), westwards to the neighbourhood of Oran and Tlemcen, south to the northern Atlas range, as far as Berrouaghia (at least) and Mascara.

Galerida theklae erlangeri Hart. : Replaces *G. t. harterti* further westwards, in North Marocco (Tanger, Yebala), south to the region of Azrou (Middle Atlas), Upper Oued Beth, Upper Bou-Regreg, Tafoudait, Mamora, and probably farther southwards.

This form is very closely allied to *G. t. harterti* of North Tunisia and North Algeria, but has a much smaller and finer bill.

Galerida theklae ruficolor Whit.: Replaces *G. t. erlangeri* from the Oum-er-Rebbia south to the Sous, but does not ascend, in the Great Atlas, over 4,600 feet, in the narrow valleys south of Marrakesh not 1,000 metres. It extends north-eastwards by Meknès, Fez (Fes), to Lalla Marnia in North-West Algeria.

Alauda arvensis harterti Whit.

An adult male in nesting condition was shot 26.iv.1927 west of Tlemeen, near Oudjda. Several were singing, and these Skylarks were doubtless breeding on the plain of Angad. It seems to me that the same subspecies breeds there as well as on the Hauts Plateaux of the Middle Atlas, the plains of Tunisia, and the Algerian Plateau, and that it is more the condition of wide plains than the elevation they care for.

Chersophilus duponti duponti (Vieill.).

On the plateau between Bou Saada and Djelfa I heard the peculiar song and Mr. Turtle shot a specimen. This is the same plateau, with much *Artemisia* and *Thymus*, on which we found this bird not rare farther north, near Aïn-Oussera, in 1914. In Tunisia we were not far enough south to come across *C. d. margaritae*.

Mr. Bannerman's notes in *Ibis*, 1927, Suppl. pp. 108–111, require some comment. It is valuable to have specimens in spirits, though there could never be any doubt that *Chersophilus* is a Lark! I cannot find the plate in Whitaker's *B. of Tunisia* at all good, but I would not call it too yellow. The district where Bannerman shot two specimens was about the same in which Koenig discovered this subspecies, and the skins from there are somewhat intermediate, not as bright as those from Medenine, Tatahouine, Cyrenaica, and Sollum. Bannerman deplored that no one had a sufficient series to discuss the subspecies of this bird. It is true that the British Museum had only a very small series and he obtained two, one of which was skinned. But had he seen the series of 44 skins of the two subspecies in the Tring Museum, he would perhaps not have said so. The species is entirely a bird of North Africa, and the few specimens known from Portugal, Spain, and the Provence must have been astray, for it does apparently not breed there. Bannerman again mentions specimens from the "Balearic Islands," but it is known that no *Chersophilus* occurs there. The supposed Balearic specimens were bought on the market by one of the Brothers Gal (Gal Frères) in Nice and labelled "Iles Baléares." They were not "collected by Schutter," but bought from the German dealer Wilh. Schlüter, who had received them from Gal Frères. The birds came from North Algeria or Tunisia. Gals' wrong locality has disturbed many ornithologists. I thought we had published the facts, but this does not seem to be the case. All we find about it is in Jordans' *Vogelfauna Mallorcas*, pp. 64, 65, 1914.

Rhamphocorys clot-bey (Bp.).

Hachisuka, myself, and Jourdain have, in 1927, in vain searched for it near Aïn-Sefra, in the places where it was fairly common in 1913.

The species, however, has recently been recorded (Foley & Céard, *Bull. Hist. Nat. Afrique Nord*, xviii, 1927, p. 180) from Béni-Ounif and Colomb Béchar, and Heim de Balsac found it 50 km. north of Aïn-Sefra in Marocco (H. de B. in litt.).

Motacilla flava iberiae Hart.

I found this, the Spanish, subspecies again, evidently on the breeding-ground, on a wet meadow with tamarisk bushes on the Oued Tensift near Marrakesh on May 8. A male with the white superciliary line narrower and shorter was shot at Biskra on April 3.

Motacilla alba subpersonata Meade-Waldo.

Observed on the Tensift River north of Marrakesh.

Lanius excubitor dodsoni Whit.

It seems that nearly all the dark Shrikes of Tunisia belong to *dodsoni*, and that *algeriensis* is usually only found rarely in North Algeria and common in North Marocco, where it ranges down to about Casablanca, and is not rare on the Upper Oued Beth, but from the Oum-er-Rebbia southwards it is everywhere replaced by *dodsoni*.

Lanius excubitor elegans Swains.

A few Grey Shrikes were seen near Beni Ounif, and specimens shot belong to *elegans*, and this form was also found by Heim de Balsac north of Figuig. A Grey Shrike seen by Lord Rothschild near Aïn-Sefra, in 1913, was then probably also *elegans*.

Erithacus rubecula witherbyi Hart.

Erithacus rubecula witherbyi Hartert, *Vög. pal. Fauna*, i, p. 753 (1910—Northernmost Tunisia (Camp de la Santé), North Algeria (Hammam R'hira and Blidah Glacière) and Marocean Atlas. The latter statement wrong, the Maroccan form being slightly different again: *E. r. atlas* Lynes).

Erithacus rubecula lavaudeni Bannerman, *Bull. B.O. Club*, xlvii, p. 24 (1926—Les Sources, Aïn-Draham); *Ibis*, 1927, *Suppl.* p. 140.

It was from specimens from the Kroumirie, Camp de la Santé, a few miles from "Les Sources" and North Algeria, that I described *E. r. witherbyi*, and this has been accepted by MM. Lavauden, Blanchet, and Bédé and others, and is correct. The differences which Bannerman pointed out are either individual, or due to his comparing birds shot later, when they fade considerably. Even ours shot 29.iii are a slight tinge lighter than his from March 7. We took care to collect half a dozen Robins at "Les Sources," the exact place where Bannerman collected his "*lavaudeni*." Robins were common near Camp de la Santé (only a few miles from Les Sources), in the same vast forest and at Les Sources, and we could have shot more, if it had not rained all the time we were there. All our skins are alike, and they do not differ from the type of *witherbyi*, except that the upperside is a *slight shade* darker, due to their being shot a month earlier. The Camp de la Santé specimen is not, as Bannerman says, "difficult to separate from *E. r. witherbyi*," but not at all separable, except that it is, due to the date

when shot, slightly *lighter*, but not darker, as it should be, if Bannerman's *lavaudeni* was separable. There is no difference in size either, nor does the bill differ constantly. Much as I regret, that I must reject Lavauden's name and Bannerman's supposed subspecies, I must decidedly state that *lavaudeni* is a synonym of *witherbyi*.

The European form winters in Africa Minor, in fair numbers, from Morocco to Tunisia. The Robins at Les Sources were evidently "at home," singing in spite of the rain and cold.

Hirundo rustica.

When we were in Colomb Béchar I was struck by the great tameness of the Swallows in the hotel yard. They used to come and sit on railings and wires so that one could almost take them in the hand, but in the evening, when the light was turned on, I actually took several in my hands and put them back on the wire from which I had taken them.

Delichon urbica meridionalis Hart.

In Orléansville 14.iv.1927 we observed a colony on a large house in the town. The birds were building and apparently repairing old nests. A male shot had testes 5 mm. long and was very fat. It is very typical *meridionalis* with very short tip of the wing, the left wing measuring 101 mm.

In Bou-Saada, April 7, House Martins swarmed in the river-bed, but they were probably still on migration.

Riparia rupestris rupestris (Scop.).

Several were flying on the rocks of El-Kantara on April 2, but whether they were breeding there or not I could not say. The neighbourhood of El-Kantara is, however, the only place where the Rock-Martin is known to breed, except (teste Heim de Balsac) the Gorge de Chiffa in North Algeria.

Riparia riparia riparia (L.).

A flock in the river-bed at Colomb Béchar, April 17, testes small, probably still on migration. Wing 108 mm.

Riparia paludicola mauritanica (Meade-Waldo).

These little Sand Martins were flying about near the Tensift River north of Marrakesh, and sat on the telegraph wires by hundreds. All these were either young (with pale rufous-sandy edges to the feathers of the upperside), or adults in full moult, after the breeding season, sexual organs very small, quite reduced. The old feathers are quite pale sandy, the new ones dark mouse-grey. On June 2, when we passed the same place, not a single one could be seen.

Apus melba.

The forms of the Alpine Swift are not easily understood. In 1912 (*Vög. pal. Fauna*, p. 835) I did not admit *Apus melba tuneti*, described by Tschusi as a paler subspecies from Tunis. Later on I recognised *tuneti*.

In 1926 (*Mém. Soc. Scienc. Nat. Maroc*, No. xvi, p. 20, publ. 1927) I called attention to the fact that a specimen from Meknès, taken from the nest May 26, is darker than the others from that town, which are typical *tuneti*, and might pass for *A. m. melba*. In 1927 I found the Alpine Swift as common in Fez as in Meknès, and (as I could not shoot in the crowded streets of the town) got a boy who caught six in their nests, and who also brought two clutches of three eggs each, all fresh. Now these six Swifts (three in the Museum at Tring, three in Hachisuka's possession) were all perfectly alike, dark, and indistinguishable from the darkest *A. melba melba* !

This, however, does not induce me to suggest that *A. m. melba* and *tuneti* are to be "lumped." In fact, in Tunisia all specimens nesting in various parts of the country, of which Monsieur Blanchet has a very fine series, are pale, while one, obviously on migration, passing over the plain at the foot of Djebel Cherichera in Middle Tunisia on March 25, and shot in my presence by Monsieur Lavauden, differs from all these and belongs to the dark *melba*. To the pale form belong also those nesting in Constantine. It is, however, very strange that Fez (Fès), only 55 km. east-north-east from Meknès, has a population of dark *melba*, while those of Meknès, or at least the majority of them, are pale *tuneti*.

Comparing all our Alpine Swifts, I find further that a series from Somaliland, from Hargeisa, 4,000 feet, and Bihendula, 2,000 feet, are of the pale *tuneti* type, but very much shorter in the wing and tail. While *tuneti* have wings of 217 to 229 mm., the Somaliland ones have wings of 195 to 207 mm. I therefore name this small race

Apus melba archeri subsp. nov.

Type : ♂ ad. Hargeisa, 28.vi.1918, No. 1107, collected by Sir Geoffrey Archer, in the Tring Museum. The specimens were collected in June and March. At least one of the June specimens is in moult. Named in honour of Sir Geoffrey Archer, formerly Governor of British Somaliland.

As long ago as 1880 Legge called attention to small dark Alpine Swifts obtained in Ceylon, apparently nesting on the island. I mentioned them again in the *Vög. pal. Fauna*, 1912, and Baker in 1927 described them, but cautiously did the same as I did, i.e. deferred action until material of breeding birds would be at hand. This I approve of heartily, as a rule, but I have now seen so many *Apus melba* from many localities, that it is evident to me that such small and at the same time dark birds, as I have seen from Ceylon, with wings only 200, 203, 207, 212 mm. (thus like *archeri* but dark !) are not found elsewhere. I therefore name the bird apparently nesting in Ceylon

Apus melba bakeri subsp. nov.

in honour of my friend E. C. Stuart Baker. Type : An adult bird from Catton Estate, Ceylon, 4,500 feet, 1866, collected by S. Bligh, ex Mus. E. Holdsworth in the Tring Museum. Three others in the British Museum.

Probably there is another unnamed though distinct form, of pale colour, like *tuneti* and *archeri*, but larger than the latter, and with the white throat patch reduced as in *A. m. africanus*. These seem to breed in the mountains of India,

and we have a specimen collected in South Arabia, in June !, by Bury. These birds require further investigation, we must have series from breeding-places before we can do more.

Apus affinis galilejensis (Antin.).

The little white-rumped Swift seems to be spreading northwards, for, as we know from Lavauden, it nests now every year on the cathedral of the town of Tunis, where it was formerly unknown. In Morocco it now nests on a house in a busy thoroughfare in Rabat, where a few years ago it was not known, and Lynes tells me that he saw a number in the air from his bedroom window in a

FIG. 11.—S.W. GATE OF MARRAKESH UNDER WHICH WHITE-RUMPED SWIFTS (*APUS AFFINIS*) NEST.

hotel in the centre of the town of Casablanca. In Marrakesh they nest under gateways of the ports of the town, in clusters over a well, and in subterranean watercourses outside the city walls.

There is no doubt that these birds are generally migratory, i.e. in Tunis and Rabat, while in Marrakesh, according to information given to Lynes by Mr. Muir, they are only entirely absent for about two months in the winter.

The specimens from Morocco cannot be separated from *A. a. galilejensis* (Antin.). This paler form is also found in Persia and North-West India. There are, however, birds which are darker, with darker and longer tails, which Baker rightly called *nipalensis* (Hodgs. 1836). Baker unites with this the apparently still darker and perhaps smaller Ceylon form, which Madarász described as *Apus singalensis*—unfortunately not quoted by Baker, as he left out synonyms, but, of course, one does not know if he did this purposely, or whether he did not know the name *singalensis*. There are, unfortunately, only two specimens in the British and only one at Tring from Ceylon, but it will be better not to close the door and to keep the Ceylon form doubtfully different.

In North Africa, south to Aïr (Asben) we find *A. affinis galilejensis*, but in the tropics, West Africa and East Africa, lives a darker form which seems not to differ in any way from the Indian *A. affinis affinis*. Breeding birds from Somaliland require attention. They are pale, like *galilejensis*, but *seem* to have shorter wings ?

Again, on the islands of Sao Thomé and S. Principé a different form is found, which is still blacker than *A. a. affinis*, and has a longer tail.

I name this subspecies

Apus affinis bannermani subsp. nov.

in honour of Mr. David Bannerman, who has written about the birds of these islands, and who confirmed the differences from the specimens in the British Museum and supplied the measurements of the latter.

A. a. bannermani differs from its allies as follows : They are darkest of all, on head, back, and abdomen, agreeing in their dark colour, especially dark black-brown forehead and blackish tail only with *singalensis*. The tail and wing is longer, though in the length of the tail *nipalensis* is about the same. All the specimens have more or less distinct blackish or brown shafts to the white feathers of the rump and dark brown shaft-lines on the throat. In other *A. affinis* the rump-feathers and throat are quite white and have only very rarely and quite exceptionally indications of dark shafts. The measurements are as follows (Mr. Bannerman having kindly supplied those of the British Museum examples) :

Wings : Princes Island : ♂ 137, ♀ 136 mm.
San Thomé : ♀ 134, 137, not sexed 135·5, 142·5 mm. !

Bill : Princes Island : 6, 6 mm.
San Thomé : 6, 7, 7, 7 mm.

Tail : Princes Island : ♂ 46, ♀ 43 mm.
San Thomé : ♀ 43, 45, not sexed 45, 47 mm.

In *A. a. nipalensis* from Nepal and Sikkim the wings measure 126, 129, 129, 130, 130, 131, 132, 133, 133 mm., tails 43, 43, 43, 44, 44, 44, 45, 45, 45·5 mm.

In *A. a. nipalensis*, however, the crown and forehead are paler brown, not so blackish, the mantle is not so deep blue-black, but brownish black, the rump feathers without dark shafts, while the tails are also dark and long.

Type of *A. a. bannermani* adult, Pedroma, San Thomé, November 1899, A. Moequerys coll., in Tring Museum.

We would therefore distinguish the following forms :

Apus affinis affinis (Gray) (probably valley of Ganges).

Western and Central provinces of India to Deccan and great parts of tropical Africa. (Specimens from Somaliland require further study, Abyssinian birds are not separable.)

Apus affinis galilejensis (Antin.) (Lake of Galilee).

From Syria to Marocco, locally distributed, nesting in colonies, Sind and North-West Provinces of India. (Nesting Sind.)

Apus affinis nipalensis (Hodgs.) (Nepal).

Nepal to Bhutan and Kamrup in Assam, Bengal Duars, Orissa to Madras and, according to Baker, to Belgaum, Mysore, and Travancore.

Apus affinis singalensis Mad. (Madarász, *Ann. Mus. Nat. Hungar.* ix, p. 420, 1911—Ceylon).

Apparently restricted to Ceylon, and requiring further confirmation, but nesting Ceylon.

Apus affinis bannermani Hart. (San Thomé and Princes Island).

Apparently restricted to these islands.

Apus affinis subfurcatus Blyth (Penang).

Assam to Burma and western China west to Chittagong and Comilla in East Bengal, Siam to Malay Peninsula, Sumatra, and Borneo.

Merops apiaster L.

I never saw so many Common Bee-eaters as on April 23 in the plantation at the bottom of the sand dunes at Aïn-Sefra. Late in the afternoon hundreds were sitting on the sand dunes, other hundreds on tamarisk-trees, others again on tall poplars, fig-trees, and others. They evidently were going to roost there, still being on migration.

Merops superciliosus chrysocercus Cab. & Heine.

On April 5 a few were seen in their old haunts on the Oued Biskra south of Biskra, where later on they nest.

On April 19 a number were seen in various places from the train between Colomb Béchar and Béni-Ounif, and we saw several in Figuig, westernmost Marocco.

On May 23 Young and I saw most clearly an adult *M. s. chrysocercus* sitting on a telegraph wire between Khemisset and the Oued Beth, not far from that river ; the colours and the long tail were very conspicuous—but what was this bird doing so far away from any of its known breeding-places, which are in the desert ?

I am afraid we cannot avoid treating *M. persicus* (and therefore, of course, also *chrysocercus*) as a subspecies of *M. superciliosus* !

Falco biarmicus erlangeri Kleinschm.

We observed this Falcon several times between Sousse and Sfax in Tunisia, and Turtle shot a beautiful adult female from the car. Several times I saw it at a distance in Algeria, but we had no time to locate nests or to shoot specimens. Between Tlemcen and Oudjda we saw one, evidently an adult female, take a chicken, perhaps three-quarters grown, from a farm-yard, close to us ; we could not see the actual striking of the bird, as it was done beyond a wall, but it flew over our heads with its quarry, and was soon out of sight behind a hill.

Falco biarmicus nests in southern Spain, but I am not aware that there are skins in any Museum, except one in Norwich ! Egg-collectors have probably got their eggs, but they are scientifically quite useless if the parents are not obtained. A lot of unnecessary collecting is unfortunately done by egg-collectors

who do not preserve birds. There are, for example, a number of eggs of Goshawks from Spain and Tanger, or its wider neighbourhood, in collections, but I believe Witherby is the only collector who has an adult Goshawk from Spain in his collection.

Falco peregrinus pelegrinoides Temm.

The above name must be used for the Lesser Peregrine of North Africa. We did not obtain specimens, though probably the bird was seen once near El-Kantara and in the Middle Atlas of Morocco, in the distance.

Falco peregrinus brookei Sharpe.

Monsieur Paul Bédé presented me with an adult male in his collection. It was captured at sea between Sfax and Kerkennah 29.x.1926 and kept in Bédé's aviary until 1.xii.1926, when it died suddenly. It was found to be full of ascarids. This bird has no red nape patch and is underneath white, with the usual dusky cross-bars, and the very faintest creamy tinge along the middle of the abdomen, throat white, jugulum with a few blackish shaft-stripes, upperside dark.

It is wrong to use the name *punicus* for this or any other Falcon. The much-discussed plate of *Falco punicus* Levaillant jun. (to which no text appeared) represents *Falco per. pelegrinoides*; several ornithologists with whom I have discussed the question (with specimens for comparison) agree with me. We have several specimens which agree closely with the plate, while I have not seen any *brookei* like it. When Monsieur Lavauden was at Tring, he was astonished to see our plate of *Falco punicus*, saying he could now understand my explanation of the plate, but the plate in his copy (or the one he had consulted) was very different. Therefore his copy must be wrongly coloured (there is no text to this plate !), for I have now seen two other copies in London which are exactly like our copy in Tring.

Kleinschmidt's idea, that it represents another subspecies, different from *brookei*, requires confirmation. Neither are our skins from Tanger very different from others from Sardinia in colour (except that they are in less fresh plumage, and therefore a bit faded), nor are they noticeably smaller. Kleinschmidt's own measurements only suggest them to be smaller, as he measures (and his measurements are exceedingly correct) "*punicus*" wings ♂ ad. 274–290, ♀ 325–339, "*brookei*" ♂ 290–299, ♀ 328–348 mm. Surely a few mm. in a Peregrine are not of any importance, if only such few specimens are examined.

It is regrettable that Kleinschmidt did not mention the South Spanish Peregrines, which I find in every way indistinguishable from those from Tanger and not essentially different from Corsican and Sardinian ones. Wing ♂ ad., Aquilas near Murcia 12.iv.1899, Gray coll., on the label correctly called "Mediterranean Peregrine." Besides this we only have a young female from the same locality. A pair still nests on the Rock of Gibraltar, where it is protected.

Of North Africa we only know the following: Formerly Olcese and Favier used to obtain many specimens on the northern Peninsula of Morocco, and it nested at Cap Spartel (teste Irby). Specimens are also occasionally obtained on the coasts of Tunisia, mostly through Monsieur Blanc. Vaucher obtained

one at Rabat, May 1898, and according to Kleinschmidt, Flückiger one at Kerrata in North Algeria.[1] Others evidently nest not only on Corsica and Sardinia, but also on Mallorca, Elba, Monte Cristo, and apparently near Marseille (specimen in Marseille Museum). It seems therefore that *F. p. brookei* is the nesting form in North Marocco (while farther south breeds *pelegrinoides*), but for Algeria and Tunisia, as far as I know, the nesting has not been proved.

Falco naumanni naumanni Fleisch.

Very numerous at El-Hajeb. On the walls of Chella and Sallé they had, I am sorry to say, considerably decreased against 1924 and 1925, but I do not know the reason. Though I have seen an irresponsible boy shooting two near Sallé in the month of May, I do not think that these pretty and useful Falcons are much persecuted by the European gunners, but that there may have been some natural causes for a (temporary) diminution of the species.

? **Aquila heliaca adalberti** Brehm.

One morning at the cliffs of El-Hajeb Young and I saw two large eagles flying over in the distance, which had the underside orange fawn-colour. I do not know what they could have been if not *A. h. adalberti* in the juvenile dress. Unfortunately they were not seen again. Though this bird is very rare and perhaps not a regular inhabitant of Marocco, it has once nested near Larache, where Vaucher took the eggs and shot the female. These two big eagles were certainly not *chrysaetos*, nor could any Maroccan *rapax* appear so bright underneath—almost yellowish orange-brown.

Milvus milvus.

In *Mém. Soc. Sciences Nat. Maroc.* No. xvi, p. 36, Monsieur Paul Bédé has given the name *M. milvus harterti* to the supposed subspecies of the Red Kite in Marocco, but the type (shot by himself near Aïn Leuh) is not adult, and the slight difference in size is not a proof that this form is really smaller than European specimens.

Comatibis eremita (L.).

There are two colonies, not very far from each other, near El-Hajeb, one of which, the smaller one, was discovered by Paul Bédé, in consequence of a fortunate breakdown of the car in which he travelled from Meknès to Azrou. The rocks are very rugged and full of smaller and larger caves and holes, in which the Ibises nest. The biggest colony must consist of nearly fifty nests. The nests are inaccessible, except with elaborate climbing gear, and perhaps for lithe Berber boys accustomed to these rocks, which they climb occasionally for honey. Unfortunately no boys were available during my first visit with Hachisuka, as a big " fantasia " with endless riding, shooting, and feasting was going on near by, and when I returned there four weeks later, the Ibises had

[1] This specimen, now in Koenig's collection, I have since examined. In opposition to the specimens seen from North Marocco and Tunisia it has as large rufous patches at the back of the head as *pelegrinoides* usually has, and I think it is a strongly marked *pelegrinoides*. This specimen was shot in the breeding season.

young, as was clear from fresh pieces of egg-shells, out of which young had emerged, so I did not care to risk a life.

Once we saw the Ibises feeding close by on an inundated field, but generally one saw no sign of them until one was close to the rocks, when they came out of their holes with an audible rustle of wings, flew straight away from the cliff, then turned round and flew round and round, not entering their caves until one went away some distance or was hidden quite out of sight. When flying round their wings were quite extended, but after some time, when coming nearer to the nests, the wings were much more bent, and this was generally suddenly done by a flock. Neither while they were sitting on ledges nor when flying round was any sound ever heard by us, and certainly Bédé was mistaken when he thought that he believed that they continually kept on crying like curlews! In fact, they usually utter no sound whatever, neither when they leave the nest, nor when they fly about, nor when they walk on the ground in search of food. Only very rarely can one hear a very soft whistle, which Heim de Balsac likens a little to that of *Milvus migrans*. This latter gentleman has, however, heard also a deep, hollow croak, difficult to describe.

The food at this season consists very largely of beetles; in every stomach I found beetles, also more or less stones. In one stomach I found eight *Buprestidae* (*Julodis anoperdi*), some small *Carabidae*, several grasshoppers, several large caterpillars, ants' "eggs," and stones. *Orthoptera* are, of course, a favourite food.

Sir Geoffrey Archer shot a male in much worn plumage on September 21 at Tug Wujaleh, Somaliland, 5,000 feet high. Major Flower observed six or eight miles south of Singa on the Blue Nile on February 11, 1922, several hundred, perhaps over a thousand, of these Ibises; one was shot, and is now in the Giza Zoological Museum; he had seen specimens twice before on the Blue Nile, but never such large numbers of individuals (cf. *Ibis*, 1922, p. 598).

1923 and 1924 these Ibises, as Monsieur Heim de Balsac tells us, have certainly nested on the old cliffs south of Boghari, while in 1925 and 1927 they did not nest there, and of 1926 there seems to be no information. The theory that they nest in years with more rainfall, and therefore with many orthoptera, is probably correct. In that case they should nest again in 1928, the year—according to Heim de Balsac, in litt.—being exceptionally humid and locusts having been observed.

Chlamydotis undulata undulata (Jacq.).

Seen (and shot) on the plateau between Tolga and Bou-Saada, and observed twice from the train between Colomb Béchar and Béni Oumif.

Anthropoides virgo (L.).

On May 28 two were seen flying in the direction of Meknès near El-Hajeb, loud calling. I also saw one that was shot by Captain Ayard near Aïn Leuh in the Middle Atlas.

Columba oenas oenas L.

In June these Pigeons came with *Columba livia* and *palumbus* in flocks to the cornfields, just being cut, on the river near Asmi in the Great Atlas.

They must have come from some distance, as there seemed to be no breeding-place near.

Cursorius cursor cursor (Lath.).

A few were found (in small flocks) by Hachisuka near Beni-Ounif. Quite a number were observed north of Marrakesh in June, where a small flock was also seen in May.

Glareola pratincola pratincola (L.).

On May 10, on a small lake between Rabat and Fedhala, we found a good number, evidently on breeding ground, but they had not yet any eggs. Later, when passing along in the large omnibus of the C.T.M., the water seemed to have disappeared, and no birds were seen—though of course we could not make sure that they had deserted the place.

Numenius arquata arquata (L.).

May 5 half a dozen at the mouth of the Bou Regreg near Rabat.

Numida meleagris sabyi Hart.

I had been told it would be easy to come across Guinea-fowls near Ouldjet-es Soltan, but there are none near that post, and we saw not one. Some Berbers, however, brought in two for Hachisuka. The crop of one of them was full of beetles: several Buprestids of the species *Aurigena unicolor* var. *igniventris*, *Julodis anoperdi* var. *algirica*, and *Lydus marginatus* F.

A clutch of eight eggs was found near the Upper Oued Beth on May 14. It was somewhat incubated. The eggs measure 49 × 39, 50·5 × 39, 51 × 38·5, 51·3 × 39, 51 × 39·5, 52·5 × 38·5, 53·5 × 37·7, and 54 × 39 mm.

As I proposed to treat all real Guinea Fowls as subspecies of one species, the name of the Marocean form remains *N. m. sabyi*. Linnaeus, when creating the name *Phasianus meleagris* (*Syst. Nat.* ed. x, i, p. 158, 1758), took this from his own "*Gallina* (*Meleagris*)" in Hasselquist's *iter Palaestinum*, p. 274, where a specimen is described which came from Nubia: "Subjectum descriptum ex Nubia erat allatum, ex Mercatoribus Nubiis," etc., and the bristles on the forehead are described. It is therefore perfectly adequate to refer to the work on Hasselquist's voyage, edited by Linnaeus, after Hasselquist's death, and the name of a bird that came from Nubia and has bristles on the forehead cannot be accepted for one from West Africa without bristles!

In an excellent "Monografia delle Galline di Faraone (Numididae)" Professor Alessandro Ghigi (1927) kindly admits that my view might be taken, but, he adds, that the change is not really necessary in obedience to the principle of priority, and that the Guinea Fowl's names should not be changed because these birds did not belong exclusively to the ornithologists, but belonged also to agriculturists and scientific men working in applied zoology. To this I must reply, that the acceptance of the name *meleagris* for the Nubian Guinea Fowl is not only possible but unavoidable. Agriculturists will not worry about this, and surely none of them has noticed it, though it is now in use for a number of years; they will call it Gallina di Faraone, like English farmers call it Guinea

E. Hartert photo.

Views from the Great Atlas, Marocco.